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species. Unfortunately his description and his figures of this species fail to give a full enough account of the structure to enable anyone to place it with certainty in any of the genera recognized in modern taxonomy of the Acanthocephala. . . . No evidence is presented, either in his description or in his figure, which would make it seem probable that his species belongs to the genus *Filicollis*. Thus on opposite sides of the arctic circle the King Eider apparently is parasitized by Acanthocephala representing two distinct genera."—R. M. A.

Economic Ornithology in Recent Entomological Publications.—

A few recent entomological contributions contain noteworthy references to bird enemies; they relate to the following insects:

Round-headed apple-tree borer (*Saperda candida*): Losses from this insect have increased with the development of apple growing, and at present the species is a primary pest throughout the region east of the Rocky Mountains. Mr. Fred E. Brooks, author of a comprehensive bulletin¹ on this borer says: "Probably no other economic insect of equal importance has had so few natural enemies recorded definitely and specifically as has the round-headed apple-tree borer," and that personally he has never found any evidence of hymenopterous parasites. However, he goes on to say that:

"While the control effect of parasites and predacious insects on this borer is negligible, woodpeckers play an important part in holding it in check. Wherever the writer has collected specimens or made observations in borer-infested localities the work of these birds has always been in evidence. Soon after the borers hatch the woodpeckers begin to find them beneath the thin covering of bark and thereafter the birds drill for them as long as they are in the tree. In several orchards where counts were made from 50 to 75 per cent of the borers had been destroyed in this way.

"During October, 1915, 24 young borers were collected and planted in furrows gouged out of the wood beneath loosened tongues of bark on the trunk of an apple tree. A week later, when the tree was revisited for the purpose of putting a wire screen around the trunk to protect the borers from birds, woodpeckers had punctured every tongue of bark and removed the borers from beneath. Not one had escaped. In May of the same year, while pupae were being collected from an orchard, a total of 11 pupal cells were found and from every one the occupant had been removed by woodpeckers. In another case 21 pupal cells were found, 19 of which had been opened by woodpeckers and the insects removed." (pp. 29-30.)

Ribbed pine-borer (*Rhagium lineatum*): While not a serious insect pest, this species materially hastens the death and decay of injured pines. A

¹ Bul. 847, U. S. Dept. Agr. 1920.

recent writer on the subject notes¹ that: "Birds, chiefly the woodpeckers, are the most important of the predatory enemies. It is not uncommon to find infested trees where these birds have removed from one-half to two-thirds of the larvae and adults during a single winter."

Semitropical Army Worm (*Xylomyges eridania*): This insect has developed into a serious enemy of agriculture in Florida within the last few years and although complete studies of its habits and enemies have not yet been made, it has been learned that birds including the Bobwhite, Boat-tailed Grackle, Meadowlark, Bobolink and Loggerhead Shrike feed upon it to a very noticeable extent.²

Earwig (*Forficula auricularia*): This species which has been introduced into Rhode Island where it has become numerous, spread and done considerable damage is treated in an article by an English author who has collected³ the records of its capture by British wild birds. Summing them up he finds that 13 species of birds are known to have captured earwigs, most of them sparingly. Similarly there are only a few records of American birds eating these insects but in considering such cases there should be kept in mind the proportion these small groups bear to all of the food available to birds. The earwigs are a very insignificant part of the insect fauna of either England or the United States and no surprise should be felt, therefore, that they are not more often eaten by birds.—W. L. M.

The Bird Interest in Iowa Lakes.—A report valuable not only for its findings and recommendations, but especially as a voucher of deep public interest in the subject, is that upon Iowa Lakes and Lake Beds by the State Highway Commission. (250 pp. 1917.) In the first place it is most encouraging to note that in nine-tenths or more of the cases retention and improvement of the lakes is recommended. The Commission has wisely resisted clamor by drainage advocates and considering the rights of the entire public has in consequence adopted a policy of conservation. In nearly every case, the report states, in which the drainage of a lake has been petitioned, the great damage caused to crops by blackbirds which congregate in the vicinity of the lake has been set forth as one of the principal reasons why drainage was desired. A careful field investigation of these depredations was made by the State Agricultural Experiment Station and the following conclusions reached: (1) Slight damage is done to sprouting corn and that in very limited areas near nesting colonies of birds; (2) Damage to small grains is confined to the season they are in shock, is serious only when the shocks are left exposed a long time, and is restricted to small areas near groves, sloughs

¹ Hess, Walter N., Mem. 33, Cornell Univ. Agr. Exp. Sta., May, 1920, p. 379.

² Berger, E. W. Quart. Bul. State Plant Bd. Fla., Vol. 4, No. 2, Jan. 1920. pp. 27-28.

³ Brindley, H. H., Proc. Cambridge Phil. Soc., Vol. 19, 1918, pp. 175-177.